

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Shannen C. Delaney on 5/14/09.

9. (Currently Amended) A network storage system comprising:

a plurality of network devices;
one or more switches, each network device connected to at least one of the one or more switch;

a plurality of disks having a first ownership attribute written to a predetermined area of each disk and a second ownership attribute in the form of a small computer system interface (SCSI) reservation tag, wherein the first and second ownership attribute are written to each disk, each disk connected to at least one of the plurality of switches,

~~[[]]wherein the predetermined area of the disk is sector 0 on the disk and the ownership information stored in sector 0 is definitive ownership data for determining ownership of the disk;~~

each network device of the plurality of network devices identifies all disks owned by that network device using ownership information written to the predetermined area of each disk of the plurality disks and, for each identified disk, if a mismatch occurs between the ownership information on the predetermined area of the disk and the

Deleted:

25 ownership defined by the SCSI reservation tag, then using the ownership information
26 written to the predetermined area of the disk as definite ownership data without requiring
27 the owned network device to send a second SCSI reservation tag and each network
28 device is configured with a table and to store entries in a table, wherein each entry
29 identifies an owned disk of the network device storing the table; and a second network
30 device configured to identify all disks owned by a first network device in response to a
31 failure of the first network device, wherein each network device can read ownership
32 information of each disk, to set a SCSI release tag for each disk owned by the first
33 network device, in response to the failure of the first network device, to transfer the disk
34 to an unowned state, and to remove ownership information stored in the predetermined
35 area of each disk owned by the first network device to complete transferring each disk
36 into the unowned state.

1 17. (Currently Amended) A network storage system comprising:
2 a plurality of network devices;
3 one or more switches;
4 a plurality of disks; and
5 means for writing ownership information to a predetermined area of each disk of
6 the plurality of disks, wherein the predetermined area of the disk is sector 0 on the
7 disk and the ownership information stored in sector 0 is definitive ownership data
8 for determining ownership of the disk;
9 means for setting a small computer system interface (SCSI) reservation tag of
10 each disk to provide a two part indicia of ownership, where the two part indicia of
11 ownership are written to each disk;
12 means for creating a table on each network device in the network storage system;
13 means for identifying all disks owned by each network device using ownership
14 information written to the predetermined area of each disk of the plurality disks and, for
15 each identified disk, if a mismatch occurs between the ownership information on the
16 predetermined area of the disk and the ownership defined by the SCSI reservation tag,
17 then using the ownership information written to the predetermined area of the disk as
18 definite ownership data without requiring the owned network device to send a second
19 SCSI reservation tag; [[and]] in response to identifying, means for storing entries in the
20 table, wherein each entry identifies an owned disk of the network device storing the table;
21 means for identifying, by a second network device, all disks owned by a first network
22 device in response to a failure of the first network device, wherein each network device
23 can read ownership information of each disk;

means for setting a SCSI release tag for each disk owned by the first network device, in response to the failure of the first network device, to transfer the disk to an unowned state; and

means for removing ownership information stored in the predetermined area of each disk owned by the first network device to complete transferring each disk into the unowned state.

20. (Currently Amended) A network storage system comprising:

one or more switches interconnected to form a switching fabric;

a plurality of disks, each of the disks connected to at least one of the switches, each disk storing a first ownership attribute to a predetermined area of a disk and each disk associated with a second ownership attribute in the form of a small computer system interface reservation, wherein the predetermined area of the disk stores definitive ownership data for determining ownership of the disk and the small computer system interface reservation allows other network devices to read the ownership attribute from the disks; [[and]] one or more network devices, interconnected with the switching fabric, each of the network devices being configured to own a predetermined set of disks of the plurality of disks through use of the first and second ownership attributes, wherein each network device identifies all disks owned by the network device using ownership information written to the predetermined area of each disk of the plurality disks and, for each identified disk, if a mismatch occurs between the ownership information on the predetermined area of the disk and the ownership defined by the SCSI reservation tag, then using the ownership information written to the predetermined area of the disk as definite ownership data without requiring the owned network device to send a second

48 SCSI reservation tag and each network device is configured with a table and to store
49 entries in a table, wherein each entry identifies an owned disk of the network device
50 storing the table; and a second network device configured to identify all disks owned by
51 a first network device in response to a failure of the first network device, wherein each
52 network device can read ownership information of each disk, to set a SCSI release tag for
53 each disk owned by the first network device, in response to the failure of the first network
54 device, to transfer the disk to an unowned state, and to remove ownership information
55 stored in the predetermined area of each disk owned by the first network device to
56 complete transferring each disk into the unowned state.

27. (Currently Amended) A computer-readable storage medium containing executable program instructions executed by a processor, comprising:

program instructions that write ownership information to a predetermined area of a disk, wherein the predetermined area of the disk stores definitive ownership data for determining ownership of the disk;

program instructions that set a small computer system interface reservation tag for the disk to a state of network device ownership to provide a two part indicia of ownership for the disk, where the two part indicia of ownership are both written to the disk and the small computer system interface reservation tag allows other network devices to read the ownership information from the disks;

program instructions that create a table on each network device in the network storage system;

program instructions that identify all disks owned by the network device using ownership information written to the predetermined area of each disk of the plurality disks and, for each identified disk, if a mismatch occurs between the ownership information on the predetermined area of the disk and the ownership defined by the SCSI reservation tag, then using the ownership information written to the predetermined area of the disk as definite ownership data without requiring the owned network device to send a second SCSI reservation tag; [[and]]

in response to identifying, program instructions that store entries in the table, wherein each entry identifies an owned disk of the network device storing the table;

program instructions that identify, by a second network device, all disks owned by a first network device in response to a failure of the first network device, wherein each network device can read ownership information of each disk;

program instructions that set a SCSI release tag for each disk owned by the first network device, in response to the failure of the first network device, to transfer the disk to an unowned state; and

program instructions that remove ownership information stored in the predetermined area of each disk owned by the first network device to complete transferring each disk into the unowned state.

Allowable Subject Matter

Claims 6-9, 11-17, 19-20, 23-43 are allowed.

The following is an examiner's statement of reasons for allowance: the prior art of record

fails to teach a second network device configured to identify all disks owned by a first network device in response to a failure of the first network device, wherein each network device can read ownership information of each disk, to set a SCSI release tag for each disk owned by the first network device, in response to the failure of the first network device, to transfer the disk to an unowned state, and to remove ownership information stored in the predetermined area of each disk owned by the first network device to complete transferring each disk into the unowned state

in combination with all the elements in the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DJENANE M. BAYARD whose telephone number is (571)272-3878. The examiner can normally be reached on Monday- Friday 5:30 AM- 3:00 PM.,

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Jr. Vaughn can be reached on (571) 272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2444

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. M. B./
Examiner, Art Unit 2444
/William C. Vaughn, Jr./
Supervisory Patent Examiner, Art Unit 2444